

Remarks

Applicant respectfully requests reconsideration of the pending claims of the instant application in view of the preceeding amendments and the following remarks. Currently, claims 1-3, 5-8, 9-13, 15, 23 – 26, 28-35, 46-47, 50, and 58 are pending.

Claim Rejections – 35 U.S.C. § 112

Claims 13 and 15 were rejected under 35 U.S.C. § 112, first paragraph. The Office Action asserted that portions of claim 13, elements “h” and “g” (now correctly labeled “i”) were not enabled by the specification. As amended, elements “h” and “i” of claim 13 recite:

- h) a position sensor coupled to such pressure roller for determining a distance between said dispenser and the glass surface when the roller contacts the tape and/or the glass surface; and
- i) an actuator for moving the tape dispenser to a specified distance above the glass surface based on an output from the position sensor.

Support for elements “h” and “i” can be found in the paragraph beginning on line 27, page 22 of the specification, which states:

Referring to Figures 13, 14 and 15, the engagement actuator 122 that carries the pressure roller 62 includes a linear position sensor 128. The linear position sensor 128 senses the position of the pressure application wheel 62 relative to the tape dispenser 40. A signal is provided by the linear position sensor 128 to the controller 44. When the pressure application wheel 62 is in engagement with the tape 14 and the glass pane 16, the signal provided by the linear position sensor 128 provides an indication of the distance d1 between the glass pane and the tape dispenser 40. The signal provided by the linear position sensor 128 is processed by the controller. The controller causes the vertical motor 240 to move the tape dispenser 40 to a specified distance above the glass pane 16. One acceptable linear position sensor 128 is Northstar #PELMIX3-02.5-101.

Claim 13 is enabled by the specification. Claim 15 depends from claim 13 and is also enabled by the specification

The Office Action rejected claims 12, 25 and 28-33 as being indefinite. Claim 12 has been amended to clarify that the tape spool, platen, and rewind spool are mounted to a removeable cartridge that is attached to the frame and that the drive roller is mounted to the frame. Amended claim 12 is definite.

With regard to claims 25 and 28-33, the Office Action asserts that “said frame” lacks sufficient antecedent basis. Claims 25 and 28-33 have been amended to recite “a frame of the tape dispenser” instead of “said frame.” The Office Action states that there is insufficient antecedent basis for the “said pressure roller” in claim 30. Claim 30 has been amended to recite “a pressure roller” instead of “said pressure roller.” Applicant respectfully submits that claims 25 and 28-33 are definite as amended.

Claim Rejections – 35 U.S.C. § 103

Claim 12

The Office Action rejected claims 1, 2, 5-11, 23-25, 28-35, 46, 47 and 50 under 35 U.S.C. 103(a) as being unpatentable over the Kuhn et al. reference.

Amended claim 12 features a tape dispenser for supporting a roll of tape having a liner, separating the tape from the liner and applying the tape to a surface. The dispenser includes a frame and a removable cartridge attached to the frame. A tape spool, platen and rewind spool are mounted to the cartridge. A drive roller is rotatably mounted to the frame for controlling the length of tape unwound from the tape spool. The tape spool, drive roller, platen and rewind spool define a path of travel from the tape spool, around the drive roller, around the front-end portion of the platen to the rewind spool.

Amended claim 12 is not obvious in view of Kuhn et al., because claim 12 includes elements that are not shown or suggested in Kuhn et al. Kuhn et al. does not disclose or suggest a tape spool, platen and rewind spool that are mounted to a removable cartridge. Figure 1 of the Kuhn et al. patent clearly shows that there is no removable cartridge that mounts the tape spool, platen, and rewind spool. Figures 1 and 3 of the Kuhn et al. reference clearly show that the tape spool, drive roller, platen and rewind are mounted directly to a base (or frame) 101 and not being part of a removable cartridge as required by claim 12. In fact, paragraph [0057] of the Kuhn et al. reference explains how a roll of tape is threaded directly into the tape head 100, rather than with a removable cartridge. Applicant respectfully points out that each claim element must be shown or suggested by the reference itself. Since claim 12 includes features that are not shown or suggested by Kuhn et al., claim 12 is not obvious in view of Kuhn et al.

Claims 1, 2, 5-11, 23-25, 28-35, 46, 47 and 50

The Office Action rejected claims 1, 2, 5-11, 23-25, 28-35, 46, 47 and 50 under 35 U.S.C. 103(a) as being unpatentable over the Kuhn et al. reference in view of Dailey, Jr. (2002/0170663).

Claim 1 recites a tape dispenser system for supporting a roll of tape having a liner, separating the tape from the liner and applying the tape to a glass sheet. A gantry supports and moves the dispenser relative to a surface of the glass sheet. The dispenser includes an optical sensor coupled to the frame for detecting edges of the glass sheet. A controller is coupled to the gantry and the sensor for determining a sensed orientation of the glass sheet based on optical sensor outputs. The controller moves the dispenser to apply the tape at a controlled angle based on the sensed orientation.

Claim 1 is not obvious in view of the Kuhn et al. and Dailey, Jr. references, because claim 1 includes features that are not shown or suggested in these references. Specifically, the Kuhn et al. and Dailey, Jr. references do not disclose or suggest a controller coupled to a sensor that determines the orientation of the glass sheet based on the optical sensor outputs and moves the tape dispenser at a controlled angle based on the determined orientation. In both Kuhn et al. and Dailey, Jr., the glass sheet must be oriented correctly before tape can be dispensed. With the invention of claim 1, the glass sheet can be placed in an arbitrary orientation.

The Office Action points out that Kuhn et al. discloses that to determine *the initial location of the tape head on the tabletop*, the actuators can include sensors. (Office Action, p.6 lines 7-11). However, claim 1 requires that the sensor be used to determine the *orientation of the glass*, not the location of the tape head on the tabletop. In fact, paragraph [0040] of Kuhn et al. indicates that the “sheet of glass 2 is correctly positioned.” If the glass is “correctly positioned,” there is no need to sense the orientation of the glass.

Dailey Jr. does not disclose a sensor that is used to sense the orientation of the glass as required by claim 1. In Dailey, the sensor is used only to detect when the edge of the glass sheet is being approached, so the dispenser knows when to stop. This is explained in paragraphs [0038] and [0039] of Dailey, Jr. In Dailey, the orientation of the glass sheet must already be known when the edges are detected, because the tape is already being applied to the sheet when the edge of the sheet is to be detected. Claim 1

includes features that are not shown or suggested by the references and is in condition for allowance.

Claims 2, 3 and 5 through 11 depend from claim 1 and are also in condition for allowance.

Claim 23 features a tape application system. The tape application system of claim 23 includes a tape dispenser that is mounted to a gantry such that the dispenser moves in a three directions and rotates with respect to the gantry. An optical sensor mounted to the tape dispenser for detects points along edges of a glass plate. A controller coupled to the gantry, the dispenser actuators and the optical sensor determines a position and orientation of the glass plate based on points as sensed by the optical sensor. The controller moves the tape dispenser based on the sensed position and orientation with respect to such glass plate.

Neither Kuhn et al. nor Dailey, Jr. disclose or suggest a controller that determines a position and orientation of the glass plate based on points as sensed by the optical sensor and moves the tape dispenser based on the sensed position and orientation of the glass plate. While it may be true that Kuhn et al. and/or Dailey, Jr. can be used to apply tape to plates that have irregular shapes, there is no suggestion of sensing the orientation of the plate so that the plate can be arbitrarily placed in Kuhn et al. or Dailey, Jr. To the contrary, Kuhn et al. suggests that the sheet of glass be correctly positioned and the system of Dailey, Jr. is already dispensing tape when it senses the edges of the glass. Claim 23 is in condition for allowance.

Claims 28, 29, and 33 depend from claim 23 and are also in condition for allowance.

Claim 24 features a tape application system with a tape dispenser including a removable cartridge that carries a tape spool, platen and rewind spool. An optical sensor is mounted to the tape dispenser for detecting points along edges of the glass plate. A controller coupled to the gantry for positioning and orientating the tape dispenser with respect to such glass plate. Claim 24 is not obvious in view of Kuhn et al. and Dailey, Jr., because Kuhn et al. and Dailey, Jr. do not disclose or suggest a tape spool, platen and rewind spool that are mounted to a removable cartridge.

Claims 30-32, 34 and 35 depend from claim 24 and are also incondition for allowance.

Claims 3 and 26

Claims 3 and 26 were rejected as being unpatentable over Kuhn et al. in view of Dailey, Jr. and Higgins.

Claim 3 depends from claim 1 and further features a sensor coupled to the drive roller that measures a length of such tape that travels past said drive roller. The Kuhn et al., Dailey, Jr. and Higgins references do not show or suggest the controller coupled to a sensor that determines the orientation of the glass sheet based on the optical sensor outputs and moves the tape dispenser at a controlled angle based on the determined orientation required by claim 1. As a result, claim 3 is also not obvious in view of these references.

Claim 26 depends from claim 23 and further features a sensor coupled to the drive roller that measures a length of such tape that travels past said drive roller. The Kuhn et al., Dailey, Jr. and Higgins references do not disclose or suggest the controller that determines the position and orientation of the glass plate based on points as sensed by the optical sensor and moves the tape dispenser based on the sensed position and orientation of the glass plate required by claim 23. As a result, claim 26 is also not obvious in view of these references.

Claim 13

Claim 13 was rejected as being unpatenable over Kuhn et al. in view of Luhman and Higgins. Claim 13 includes a pressure roller rotatably mounted to the frame by a pneumatic actuator. A position sensor is coupled to the pressure roller for determining a distance between the dispenser and the glass surface when the roller contacts the tape and/or the glass surface. An actuator for moves the tape dispenser to a specified distance above the glass surface based on an output from the position sensor.

Claim 13 is not obvious in view of the Kuhn et al., Luhman and Higgins references, because these references do not disclose or suggest the position sensor coupled to the pressure roller used to determine the distance between the tape dispenser and the glass surface required by claim 13. The Office Action asserts that Kuhn et al.

discloses that to determine the *initial location of the tape head on the tabletop*, the actuators can include sensors to determine the location. Applicant points out that a sensor that determines the position of the dispenser with respect the tabletop 14, does not determine the distance *between the dispenser and the glass surface* as required by claim 13. A sensor that determines the position of the dispenser with respect to the table does not determine the distance between the dispenser and the glass surface, because the thickness of the glass sheet is variable. The sensor configuration of the dispenser of claim 13 detects the distance between the dispenser and the glass sheet, without needing to know the thickness of the glass sheet and the variations in thickness across the glass sheet, as would be the case with a sensor configuration that determines the position of the dispenser with respect to the table.

Applicant also respectfully points out that Kuhn et al. actually does not disclose a sensor that determines the distance between the dispenser and the glass. Paragraph [0073] of Kuhn et al. actually says the actuators 30 (x-axis actuator), 32 (y-axis actuator), and 34 (rotary actuator) include sensors to determine the initial location. There is no mention of a sensor coupled to the z-axis actuator 36 that would allow the distance between the actuator and the table to be sensed.

Finally, the references do not show or suggest a position sensor that is coupled to the pressure roller. This configuration allows the distance between the dispenser and the glass surface to be determined directly when the roller contacts the tape and/or the glass surface. Kuhn et al. does not suggest coupling the position sensor to the pressure roller or otherwise configuring a position sensor such that the position sensor can directly determine the distance between the dispenser and the glass sheet.

Neither Luhman nor Higgins show or suggest a position sensor coupled to a pressure roller for determining the distance between the platen and the glass surface when the roller contacts the tape and/or the glass surface. Therefore, claim 13 is not obvious and is in condition for allowance.

Claim 15 depends from claim 13 and is also in condition for allowance.

Claim 58 has been rejected as being unpatentable over Kuhn et al. in view of Luhman and Higgins. Claim 58 recites a tape dispenser that includes a controller for coordinating actuation of a chad remover, a servo motor and a rewind motor. The

controller stops movement of the tape by de-activating the servo motor, brings the chad remover into contact with the tape, and maintains operation of the rewind motor to maintain tension in the tape as the chad is removed.

Claim 58 includes features that are not shown or suggested by the references. In particular, the references do not show or suggest maintaining operation of the rewind motor to maintain tension in the tape as the chad is removed. Claim 58 is in condition for allowance.

In view of the foregoing, claims 1-3, 5-13, 15, 23-26, 28-35, 46-47, 50 and 58 are now in condition for allowance.

Respectfully submitted,

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